

CHAPTER 2 – CERTIFICATION

The *Standard Specifications* require that plants producing hot-mix asphalt for DOTD projects be certified along with the on-site quality control laboratory. The *Standard Specifications* also require a Certified Asphaltic Concrete Plant Technician to complete HMA job mix submittals and be present at the plant or paving site during production for DOTD projects. Further, all roadway equipment involved in the transport and direct placement of the material must also be properly certified. The process and procedures for certifying plant, laboratory, equipment and personnel is the same for Section 501 (Marshall Design), Section 502 (Superpave), and Section 508 (SMA).

PLANT

The DOTD laboratory in the district in which the plant is located will certify the plant. Material shall not be produced or accepted on any DOTD project from an asphalt plant that does not hold valid certification.

As part of the certification process, Subsection 503.02 of the *Standard Specifications* requires that, to be eligible for certification, the plant must be in operation and capable of producing material to be analyzed for hardening properties of recovered asphalt.

Following is a list of steps required to certify a plant and on-site laboratory:

1. The plant shall be operational with approved materials on-site and be capable of producing mixtures that are correctly proportioned and mixed. The plant shall consistently produce specified materials in accordance with Section 501, 502 or 508.
2. The plant and laboratory meters, scales and measuring devices shall be tested, inspected and certified by the Weights and Measures Division of the LA Department of Agriculture and Forestry or by an independent scale service approved by the certifying district laboratory engineer. The Weights and Measures Division of the Louisiana Department of Agriculture and Forestry shall also verify the plant mixture-weighing device. The contractor/producer shall maintain certification of these inspections and verifications in the Plant Certification File for access by DOTD personnel. The technician will place a signed sticker in an obvious location in the plant control house. Scales shall be checked in a conventional manner using known weights of sufficient size to check the scale system in its upper ranges with a minimum number of loadings to the satisfaction of the department. When a calibration service/technician located outside of Louisiana must be used to calibrate a scale or metering device, the service/technician shall be licensed by the state where the service/technician is located under standards similar to those required by Louisiana and approved by the DOTD Materials Engineer Administrator. When a calibration service/technician located within the geographic borders of Louisiana is used to calibrate a scale or metering device, the service/technician must be licensed by Louisiana in order to calibrate scales and metering device for the department.

3. The producer shall notify the district laboratory that the plant is ready for certification.
4. The district laboratory engineer will send qualified personnel to certify the plant using the *DOTD Asphaltic Concrete Plant Certification Report* (Appendix A). This form documents the inspection of materials, crushing apparatus, individual plant components, storage/surge silos, testing and laboratory devices and Abson test results. Construction personnel may also use this form as a guide for routine plant inspection.
5. The district laboratory representative will sample mixture produced by the plant to be analyzed for hardening properties of the recovered asphalt. This test is used to determine if the manufacturing process has an adverse effect on the asphalt cement. The Abson Recovery of HMAC form (Appendix B) is used to document these results.
6. Upon satisfactory completion of the Asphaltic Concrete Plant Certification Report (including Abson recovery test), plant certification will be granted for a two-year period, provided the plant is maintained in accordance with the conditions under which certification was issued. Certified plants will have a certification sticker placed in an obvious location in the plant control house (Appendix C).
7. Every 90 days (or more frequently, if directed by the district laboratory engineer), the plant shall have its meters, scales and measuring devices tested, inspected and recertified by the Weights and Measures Division of the LA Department of Agriculture and Forestry or by an independent scale service approved by the certifying district laboratory engineer. A *DOTD Certification Report for Scales and Meters* (Appendix D) shall be completed each 90 days and two copies shall be prepared. One copy shall be presented to the resident DOTD inspector for delivery to the district laboratory engineer. The second copy shall be retained at the plant in the Certification File.
8. Every 90 days (or more frequently, if directed by the district laboratory engineer), the district laboratory engineer's representative will inspect the plant for conformance to certification requirements.

The producer shall notify the district laboratory engineer of any major change in the manufacturing process at the plant, because a new certification inspection will be required. This would include the installation of a new dryer/drum, RAP system, bag house, storage/surge system, or proportioning system.

If a plant fails to conform to DOTD standards under which certification was issued, the district laboratory engineer will revoke the plant certification. Once certification has been revoked the plant will be prohibited from supplying mix for any department project until all deficiencies have been corrected and the district laboratory engineer reinstates certification.

On a daily basis, when the plant is in production, the resident DOTD inspector will, as a part of continuous quality assurance efforts, inspect the plant and its individual components. Section 503 (Asphaltic Concrete Equipment and Process) outlines requirements for the inspection of the following items:

- Asphalt cement tanks (storage and working)
- Anti-strip additive equipment
- Cold aggregate feeders (bins)
- Hydrated Lime/Mineral Filler equipment (if needed)
- Screening systems
- Dryer/drums
- Hot-Bins (if a batch plant is used)
- Thermometers (including thermocouples)
- Dust collection systems (baghouses)
- Asphalt Measuring Equipment
- Pugmills (if a batch plant is used)
- Weigh hoppers (if a batch plant is used)
- Scales and printer systems
- Storage and Surge silos
- Mix Release agent dispenser systems

Not only shall proper functioning of these individual components be inspected, but their combined operation is to be continually monitored for proper quality production.

PLANT LABORATORY

The plant shall be equipped with a quality control laboratory that, as a minimum, shall comply with Section 722 (Field Laboratory) of the *Standard Specifications*. This section requires that the laboratory shall have a minimum of 160 square feet and adequate electrical lighting and power outlets. Laboratory buildings shall also have exhaust fans, fume hoods, air conditioning, heating, approved sanitary facilities, exhaust fans, fume hoods, and running water.

Subsection 503.02 specifies that the plant laboratory shall contain the following:

- Constant Temperature Oven (100°F to 400°F)
- Specimen Ejector
- Approved SHRP Gyratory Compactor
- Maximum Specific Gravity (G_{mm}) apparatus
- Saw, suitable for cutting pavement cores
- Automated Ignition Furnace
- Other laboratory equipment used to perform Quality Control Testing

The SHRP gyratory compactor shall only be required when mixtures are being produced under Section 502 (Superpave). The contractor shall provide sufficient six-inch diameter molds and auxiliary equipment necessary for the gyratory compactor and its calibration. DOTD will provide Marshall compactors, breaking heads, and devices and molds.

All equipment supplied by the contractor/producer (including electronic scales) shall be maintained, serviced and calibrated in accordance with the manufacturers' recommendations.

The district laboratory engineer will inspect and approve all laboratory equipment supplied by the contractor/producer at the time of initial plant certification and during all subsequent inspections.

ROADWAY EQUIPMENT

Primary roadway equipment must be certified. This equipment includes asphalt distributors, pavers, rollers and hauling equipment. The district laboratory engineer, in the district in which the equipment is operating, will arrange inspection and will issue certification. Certification signifies that the equipment is in satisfactory condition and is capable of performing its function as related to proper paving practices and in accordance with department standards. Certification will be granted following a performance evaluation on the project. These evaluations shall be documented on the following department forms:

- Asphalt Distributor – *DOTD Asphaltic Concrete Paving Equipment Certification* (Appendix E).
- Paver - *DOTD Asphaltic Concrete Paving Equipment Certification* (Appendix F).
- Roller - *DOTD Asphaltic Concrete Paving Equipment Certification* (Appendix G).

Certification of this equipment is valid for two years provided the equipment is maintained in accordance with the conditions under which certification was issued. The district laboratory representative will review certified equipment for conformance to certification requirements every 90-calendar days. If certified equipment is not in use on a state project when a review date is scheduled or when the two-year certification expires, the equipment will be inspected (recertified, if required) at the beginning of use on a DOTD project. The project engineer's representatives, at the beginning of each project, will inspect equipment. They will complete the *DOTD Asphaltic Concrete Paving Equipment Checklist* (Appendix I) during this inspection and place it in the 2059 Review for inspection documentation. A copy of the equipment certification sticker and the 90-day review sticker are shown in Appendix H.

Trucks hauling HMA to a DOTD project must also be certified. This certification is the responsibility of the district laboratory engineer. Separate tractor/trailer trucks require certification together as a unit so that an accurate total tare weight may be determined. A copy of the *DOTD Asphaltic Concrete Haul Truck Certification* form is shown in Appendix J. The DOTD number on separate tractor/trailers must match, showing that they were originally certified together. A new trailer shall require a new certification. Prior to certification, a truck or tractor/trailer shall have its tare weight determined on a truck scale certified by the Weights and Measures Division of the Louisiana Department of Agriculture and Forestry. This tare weight shall be determined with a minimum fuel tank capacity of one-half. The tare weight is used to calculate the maximum payload the truck or tractor/trailer is permitted to legally haul according to its axle configuration.

DOTD Engineering Directives and Standards (EDSM) Number III.1.1.12 outlines the *Enforcement of Legal Load Requirements on Construction and Maintenance Construction Projects* (Appendix K). A copy of the DOTD truck (and trailer, if applicable) Weight Certification Tag is shown in Appendix L.

Official certification and performance reviews/evaluations do not release DOTD or QC technician from the responsibility of monitoring the performance of plant, transport, and roadway equipment of a daily basis. If equipment fails to perform satisfactorily or is not maintained in acceptable condition the inspector is to notify the project engineer and district laboratory engineer. In the event of a serious malfunction of equipment, the certified technician or inspector has the authority to require the removal of the equipment from the project.

PERSONNEL

The contractor/producer shall employ a Certified Asphaltic Concrete Plant Technician. This technician must be present at the plant or the job site whenever plant operations are supplying materials to a DOTD project. Daily plant operations shall not commence unless the Certified Technician is present at the plant. Subsection(s) 501.03 and 502.03 of the *Standard Specifications* state that the technician be “capable of designing asphaltic concrete mixes, conducting any test or analysis necessary to put the plant into operation and producing a mixture meeting specifications.”

The department awards certification upon satisfactory completion of the requirements, which include an examination and performance evaluation. Six months experience in plant operations and QC/QA is required before an applicant is considered eligible for certification testing. Arrangements for certification testing should be made through the District Training Section.

The DOTD Materials Engineer Administrator is the certifying authority for the department with full authority to grant or revoke certification of asphaltic concrete plant and paving inspectors and technicians. When a certified or authorized inspector or technician is performing substandard work, is not able to satisfactorily perform the duties routinely required of certified or authorized personnel, engages in unethical activities. Revocation of a certification or authorization for failure to update by the established completion date will be automatic. Proceedings to revoke a certification or authorization can be initiated by LA DOTD representatives or industry, including, but not limited to, department certified inspectors, district training specialists, laboratory engineers, project engineers, construction engineers, or any member of the Certification Committee. The appropriate representative of the employing firm may also request revocation of certification or authorizations granted to nondepartment personnel.

The department’s paving inspector must be certified in the area of Asphaltic Concrete Paving Inspection. Certification in this area also requires an examination and performance evaluation following a minimum of six months experience in roadway paving.

All department and nondepartment technicians and inspectors are expected to continually monitor the production process for conformity to specifications and consistency.

Certified Technicians and Inspectors are bound, at all times, by an ethical oath promoting honesty and integrity. It is expected that certified personnel conduct their duties of quality control and quality assurance in a cooperative and professional manner.

Further, it is a requirement of asphaltic concrete technicians to complete all testing, documentation, and submittals in a neat, orderly, and timely fashion. A summary list of the required documentation is provided in the Documentation section of the Marshall, Superpave, and SMA Chapters of this manual.